

REMARKS

Specification Objections and Claim Rejections - 35 U.S.C. §112

Claims 6, 12, 15 and 17-22 were rejected under 35 U.S.C. §112, first and second paragraphs, and the specification was objected on these same bases.

5 The Examiner contends that with regard to claim 6 and 20 that the recitation of the conduit as a “breathing” conduit is new matter. Applicants have amended independent claims 6 and 20 and the specification to cancel references to a “breathing” conduit, a “thin plastic” film and a “thin walled breathing” conduit. Applicants have amended claim 6 and 20 to specify that the conduit is a “respiratory” conduit. Explicit support for this amendment is provided in the application title. Further support for this amendment is provided in the Field of the Invention section and in the introductory paragraphs of the Detailed Description of the application as originally filed.

10 Independent claims 6 and 20 have been amended to specify that the respiratory conduit is “adapted for use in a medical apparatus”. Support for this amendment is provided at page 3, lines 30-32 as follows:

15 The preferred embodiment of the sleeve of the present invention is used in the over moulding of an end connector onto a delivery conduit that may be used in medical apparatus or ventilation therapy systems.

20 The Examiner also states that with regard to claim 21 that the limitation of the “cuff is injected onto said conduit at a lower temperature than said hot molten plastic that is injected into said cuff to form said connector” is not supported by the original disclosure. Applicants submit that proper support is provided in the original disclosure at page 7, lines 12-20 which specifies:

25 The cuff 100 is made of a rubbery compound with a low melting point, so that the over moulding process will not adversely affect the integrity of conduit 29. . . The

cuff 100 prevents hot molten plastic from the connector 33 from coming into contact with the enclosed part of the conduit 29, shielding it from damage.

The respiratory conduit would be damaged if the hot molten plastic forming the connector
5 was applied directly to the outer wall. The integrity of the conduit would similarly be adversely affected if the rubber forming the cuff were injected at the same (or greater) temperature as the plastic forming the connector. This conclusion is unambiguously derivable from the quoted passage.

Therefore, Applicant submits that support for the "cuff is injected onto said conduit at a
10 lower temperature than said hot molten plastic that is injected into said cuff to form said connector" is supported by the original disclosure. Withdrawal of the rejection is requested.

Claim Rejections - 35 U.S.C. §103

Claim 6, 12, 15 and 17-22 were rejected under 35 U.S.C. §103 as allegedly being
15 unpatentable over United States Patent No. 5,749,995 to Godeau in view of United States Patent No. 6,334,615 to Uchiyama et al. Reconsideration and withdrawal of the rejection is requested.

Respiratory conduits are lightweight flexible tubes commonly fabricated from thin plastic film. This is evident from the disclosure of United States Patent No. 3,963,856 to Carlson, discussed in the Summary of the Prior Art section of the present application. Carlson discloses
20 Col. 4, lines 1-6 that:

The tube 12, which may be formed of a material such as polyethylene, has a substantially constant wall thickness of, for example, no more than about 0.010 inch. Such a wall thickness is particularly desirable when the tubing 10 is used in hospital oxygen systems to provide the desired degree of flexibility and lightness in weight.
25

Plastic connectors provide a low cost sterile coupling to pneumatically link respiratory components. Suitable plastics generally have a melting point that prohibits reliable injection of the connector directly over the conduit.

The connector fabrication method claimed in the present claims employs different materials injected at different temperatures to protect the integrity of the respiratory conduit. The low injection temperature of the rubber cuff as claimed prevents the moulding process from damaging the respiratory conduit. The rubber cuff shields the respiratory conduit from the hot molten plastic forming the connector, preventing direct contact and providing an insulating buffer.

Godeau does not disclose or suggest shielding the tube from the material used to fabricate the ring (13). The tube in Godeau is intended for application in a motor vehicle cooling system, and would therefore be able to withstand the associated high temperatures experienced within an engine compartment. The tube disclosed in Godeau would not be damaged by the injection moulding process because it is capable of withstanding elevated temperatures. Godeau does not experience the problem that the claimed invention solves, and therefore one of ordinary skill in the person would have no motivation to further modify the disclosure of Godeau to arrive at the claimed invention.

Uchiyama discloses a rolling bearing seal “to prevent a lubricant, such as grease, from leaking”, see Col. 1, lines 9-12. The Examiner stipulates that “it would have been prima facie obvious . . . to have modified the method of Godeau . . . **for the purpose, as suggested by Uchiyama et al, for forming a strong bond between the two materials.**” (emphasis added). Applicants submit that the Examiner has taken the teaching of Uchiyama out of context.

Uchiyama does not simply teach a method for improving bond strength between any two materials for any application. Uchiyama teaches an improved lubricant seal for roller bearings in the context of the acknowledged prior art. The purpose of the disclosed bearing seal is to improve sealing without additional expense, see Col. 2, lines 26-34 of Uchiyama. The bond strength of the seal is improved over conventional techniques which commonly employ adhesive bonding, see Col. 2, lines 41-44 of Uchiyama.

The Examiner asserts that one of ordinary skill in the art would find the improved roller bearing seal of Uchiyama an obvious improvement to the strength of a pneumatic hose coupling. Applicants submit that the improved bond between two materials of a lubricant seal for a rolling bearing has no obvious application to an improved bond in a tube coupling for a breathing circuit.

Therefore, Applicants submit that Godeau in view of Uchiyama does not render obvious claims 6, 12, 15 and 17-22. Reconsideration, withdrawal of the rejection and allowance of the claims is requested.

A Petition for a Two-Month Extension of Time is submitted concurrently submitted with this Amendment extending the deadline for response up to and including March 22, 2010.

Should the Examiner have any questions, the Examiner is invited to contact one of the undersigned attorneys at (312) 704-1890.

Respectfully submitted,

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